

Yeast May Inhibit Salmonella

cials and helps test the vaccine in some exotic birds.

Washington, D.C., August, 1998:

A joint ARS-CDC article appears in the *Journal of Virology* fully describing the first human and poultry strains.

At Present: Though the origin of H5N1 is still unknown, the massive worldwide media coverage has died down as the outbreak has subsided. The virus fades into “old news.”

The Hong Kong government, initially criticized for destroying all its poultry to eradicate potential virus

ROB FLYNN (K8254-13)



Veterinary medical officers David Suarez (left) and David Swayne evaluate tissue sections (top monitor) from chickens infected with Hong King H5N1 influenza. The bottom monitor displays a photo of chicken legs showing physical damage resulting from the flu virus.

carriers, is now credited with preventing a more serious outbreak.

Research teams worldwide, including those led by Sims, Cox, and Swayne, continue to study H5N1 to find out what enabled it to change hosts. If they can discover why this happened, they may be able to stop similar outbreaks sooner.—By **Jill Lee, ARS.**

David E. Swayne, USDA-ARS Southeast Poultry Research Laboratory, 934 College Station Rd., Athens, GA 30605; phone (706) 546-3433, fax (706) 546-3161, e-mail dswayne@arches.uga.edu. ♦

Yeast is good for beer and bread—and it might even be good for chickens or turkeys. That’s because a special yeast, *Saccharomyces boulardii*, may help make poultry foods even safer for people to eat.

It’s no secret that *Campylobacter* and *Salmonella* are the main foodborne pathogens likely to contaminate live poultry. A special problem: These pathogens skyrocket when birds are off feed and in the transport trucks going to slaughter. That means the birds often arrive at the processing plant with higher bacterial counts than when they left the farm.

Food technologist J. Eric Line, who is in the ARS Poultry Microbiological Safety Research Unit at Athens, Georgia, found that feeding chickens the *S. boulardii* yeast a couple of days before transport helped. He exposed flocks of poultry to various strains of *Salmonella* and *Campylobacter*, then put them through a simulated transport.

Salmonella counts increased about fivefold in untreated control birds during transport. Chickens given the yeast had no increase in *Salmonella*.

Results from a second experiment showed untreated birds increased their *Salmonella* loads from 53 to 67 percent during transport. With yeast, the birds’ *Salmonella* levels decreased 40 percent. While some *Campylobacter* levels did go down, the treatment was not as effective for this pathogen.

Overall, the *S. boulardii* yeast’s food safety benefits could be important for farmers and plant managers alike, since federal law requires them to identify key contamination points and take steps to reduce risk—including during transport.

“This yeast is generally recognized as safe for people and animals,” says Line. “We’re pleased that results show the reduction of *Salmonella*, because that’s something American consumers want—poultry that is *Salmonella*-free from farm to table.”

Line adds that there is still much research to be done on this treatment. First, farmers won’t use it, he says, unless they can do so economically. That means refining the treatment with farmers’ operating budgets in mind.

But the treatment—for which Line has filed a patent—would be one part of a complete food safety protocol. He cautioned that no single thing will work as a “magic bullet” to reduce *Salmonella* in poultry.—By **Jill Lee, ARS.**

J. Eric Line is in the USDA-ARS Poultry Microbiological Safety Research Unit, Richard B. Russell Agricultural Research Center, 950 College Station Rd., Athens, GA 30605-2720; phone (706) 546-3522, fax (706) 546-3771, e-mail eline@ars.usda.gov. ♦